Mammo Tomosynthesis

用户指南

BARCO

Visibly yours

歡迎選購！

感謝您選購本 MAMMO TOMOSYNTHESIS 顯示器！

本 MAMMO TOMOSYNTHESIS 顯示器的設計滿足醫療成像的獨特要求，能夠實現完整而不間斷的診斷和高亮的影像質量，幫助放射科醫生進行快速、準確而自信的診斷。

本 MAMMO TOMOSYNTHESIS 顯示器支援數個高級功能，能實現所必須的高效能和診斷能力。以下列出了其中一些功能：

- I-LUMINATE ™：按一下 “ 熱光 ”，亮度提升，可查看微妙細節或比較以前的影像資料。
- RAPIDFRAME ™： 快速畫素刷新，在多幀影像序列中消除運動模糊和重像。
- ALC：一個半球形照明度感測器，可根據房間內的環境光而加以相應控制。
- I-Guard：監控并調整照明度的綜合感測器，確保兼容 DICOM P14。
- QAWeb：自動質量保證測試，診斷區的遠端掃描。
- PPU： 每畫素均勻度技術。
- DURALIGHT：高超照明水平，具有很長使用期限。
- SMOOTHGRAY：超精密灰階調色板，可顯示最小覺差。

若要使用本 MAMMO TOMOSYNTHESIS 顯示器的所有功能，您必須熟悉所有這些功能以及如何使用這些功能。本指南中解釋了帶用戶互動的功能。如想更詳盡瞭解某個功能，請查閱 Barco 網站 *http://www.barco.com* 或聯繫 Barco 醫療部門。

該手冊逐步說明如何安裝和使用本 MAMMO TOMOSYNTHESIS 顯示器的不同步驟。

一般方法

本 MAMMO TOMOSYNTHESIS 顯示器 系統有兩個相同的顯示器，並排安裝在專用系統支架或自訂的 VESA 安裝架上。除非另有說明，本指南的說明適用於左邊和右邊的顯示器。

本指南中使用以下符號：

	警告：人身傷害危險		注意：對產品造成損害的風險
	重要提示或評註		註
	提示，建議		其他資訊

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包裝內容

您的 MAMMO TOMOSYNTHESIS 顯示器系統隨附了：

- 兩個顯示器
- 一個系統俯仰和旋轉支架
- 本 MAMMO TOMOSYNTHESIS 顯示器指南
- 1 張系統光碟
- 兩條顯示器埠纜線
- 兩條 USB 纜線
- 2 套交流電源線
- 兩個外部電源
- 一個鍵盤燈
- 一個膠片夾

要瞭解 Barco 顯示控制器，請查閱專用用戶指南。

請保留原始包裝材料。這些包裝材料為本顯示器專門設計，可在運輸過程中提供理想保護。

零件、控件及連接器

正視圖

Figure 1: 正視圖

1. I-Luminate/ 左鍵
2. 右鍵
3. 功能表鍵
4. 電源開 / 關鍵
5. 環境光線感測器
6. 電源 LED 燈
7. 側邊下行 USB 2 & 3

後視圖

連接器艙蓋已關閉

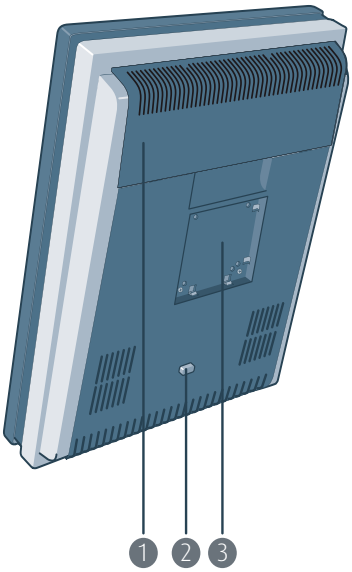


Figure 2: 後視圖蓋板已關閉

1 連接器艙蓋

2 顯示器釋放按鍵

3 安裝錨定器

連接器艙蓋已打開

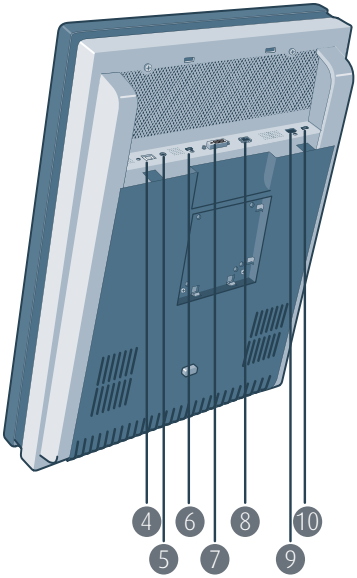


Figure 3: 後視圖蓋板已打開

4 24 V 直流電輸入

5 +5 V 直流，0.5 A 電源輸出

6 顯示器埠視訊輸入

7 DVI 視訊輸入

8 乙太網路連接器（見下面備註）

9 USB 上行

10 USB 下行 1

乙太網路連接用於維護目的，不支援使用者使用。

雙俯仰 & 旋轉支架

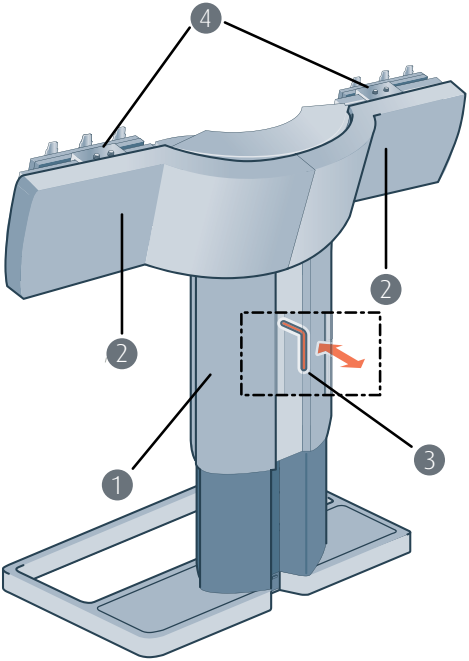


Figure 4: 雙俯仰 & 旋轉支架

1. 纜線蓋板
2. 左 & 右臂蓋板
3. 支架鎖定夾（在纜線蓋板後面）
4. 顯示器定位滑塊

附件

膠片夾

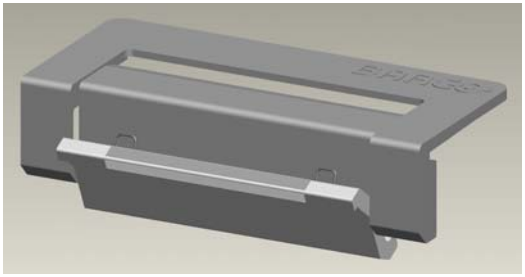


Figure 5: 膠片夾

在將 I-Luminate 用作燈箱時，膠片夾可用來放置放射膠片。

鍵盤燈

Figure 6: 鍵盤燈

鍵盤燈可安裝在顯示器下，為工作空間提供不干擾顯示器影像的照明。

設置和安裝

在安裝您的 Mammo Tomosynthesis 顯示器系統和連接所有纜線之前，確保您的電腦上安裝有顯示控制器。請查閱系統 CD 上的專門使用者指南。

安裝顯示器

使用雙俯仰 & 旋轉支架

1 打開雙俯仰 & 旋轉支架包裝，將支架放在一個固體表面上。

2 打開第一個顯示器包裝

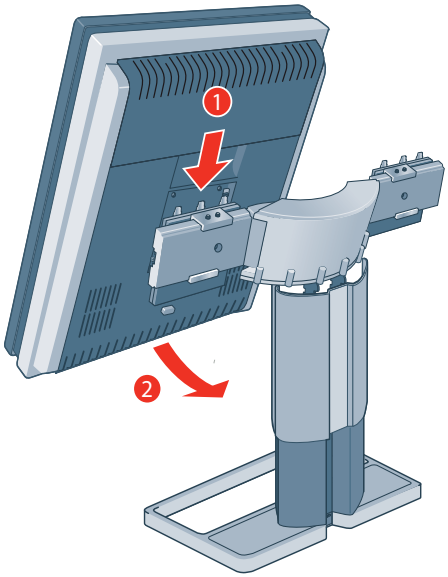


Figure 7: 安裝顯示器

3 稍微傾斜顯示器，使圖標向下，在顯示器背後找到安裝錨定器，與支架的安裝夾頂部完全對齊。

4 將顯示器下側輕柔地向後推，直到安裝夾鎖定到安裝錨定器中。

5 驗證安裝夾和安裝錨定器完全適合，并確保顯示器已經牢固安裝。

6 重複第 2 至第 5 步，安裝第二個顯示器。

⚠ 限制已安裝顯示器和支架系統的運輸距離。

7 取掉支架鎖定夾。

8 保留鎖定夾，以便日後運輸。

9 現在高度定位已經解鎖，你可調整顯示器的位置。

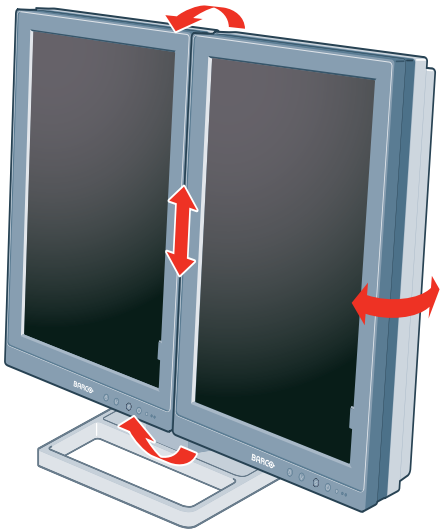


Figure 8: 調整顯示器位置

如果兩個顯示器沒有正確安裝，鬆開并擰緊定位滑塊上的相對而設的六角螺絲 （即相對側邊或相對對角線），對相對高度和相對角度進行輕微糾正。

使用 VESA 安裝

顯示器安裝錨定器可兼容 VESA 100 毫米標準。

使用可支撐顯示器重量的安裝托架。查閱該顯示器適用重量的技術規格。

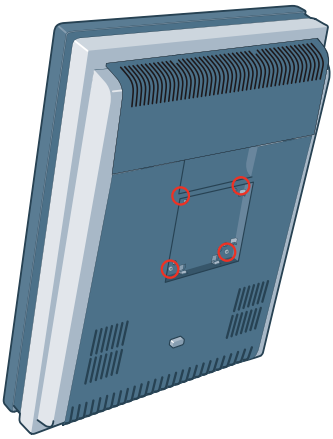


Figure 9: VESA 安裝螺絲

1. 擰下安裝錨定器上的四個固定螺絲。
2. 將顯示器 **牢固**地安裝到帶4個螺絲M4 x 10 毫米的VESA安裝托架上。應豎立安裝顯示器。不支援縱向位置安裝。

WARNING

切勿透過拉或推顯示器本身來移動連接到臂架的顯示器。應確保臂架配置 VESA 核准的手柄並使用手柄移動顯示器。

請參閱臂架的說明手冊以瞭解更多資訊和說明。

連接顯示器

可使用 DVI 或 DP 連接器，將顯示器連接到顯示控制器上。可在 OSD 功能表中選擇有源輸入。

只連接其中一個視訊連接器。同時安裝兩個輸入會導致驅動器出錯。

1 移除纜線蓋板。要移除該蓋板，須推動蓋板頂部內面的鎖定夾，輕柔地將蓋板向上滑動到軸上。如果左右臂阻礙了蓋板的移動，需要傾斜顯示器。

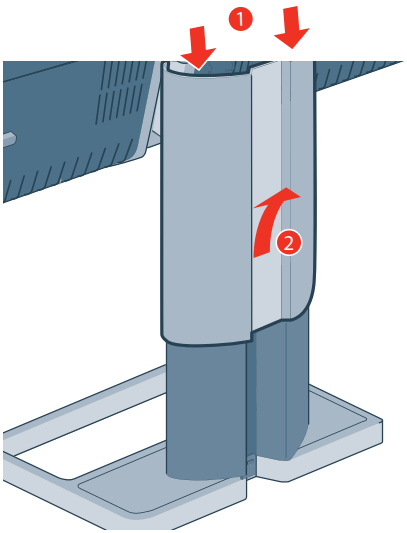


Figure 10: 移除纜線蓋板。

2 移除連接器艙蓋。要移除艙蓋，輕柔地將艙蓋邊緣推開，并將艙蓋頂部稍微拉離顯示器，將艙蓋向上提。

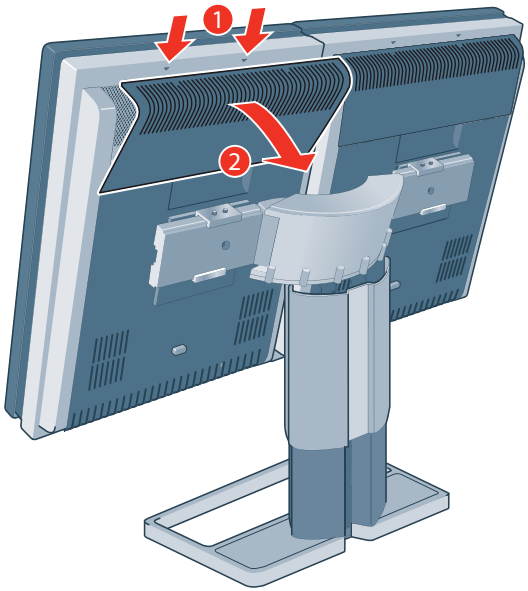


Figure 11: 移除艙蓋

3 將顯示控制器上的 DVI **或者** DP 連接到顯示器的 DVI **或** DP 連接器。

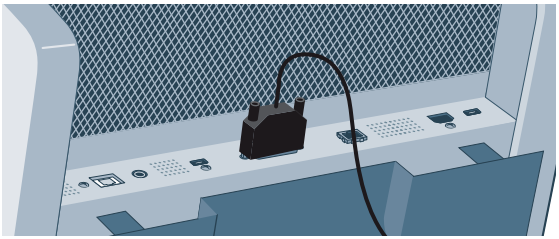


Figure 12: DVI 連接

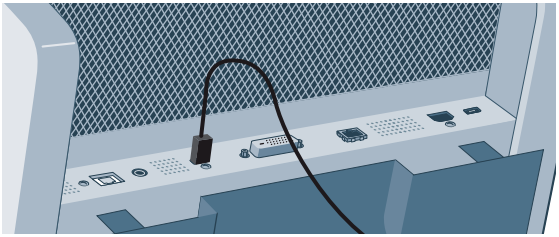
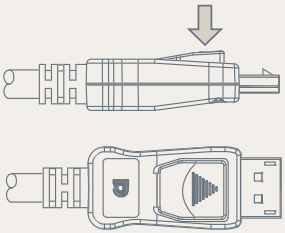


Figure 13: DP 連接

WARNING

請注意 DP 連接器配備一個纜線鎖閂，將連接器鎖固至顯示器中。

要斷開連接器連接，請在拔除的同時按住連接器上的按鈕。



4 如要使用顯示器的 USB 下行連接器，請將電腦的 USB 下行連接器連接到顯示器的 USB 上行連接器中。

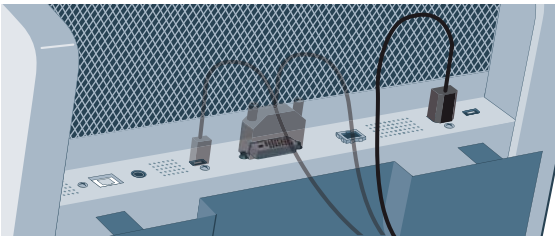


Figure 14: USB 連接器

5 如果已選擇使用顯示器的 USB 下行連接器，請將 USB 裝置連接到下行連接器其中之一上。

6 將提供的外部直流電源連接到顯示器的 +24 V 直流電源輸入上。

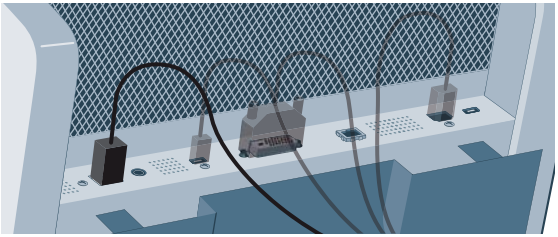


Figure 15: 電源連接

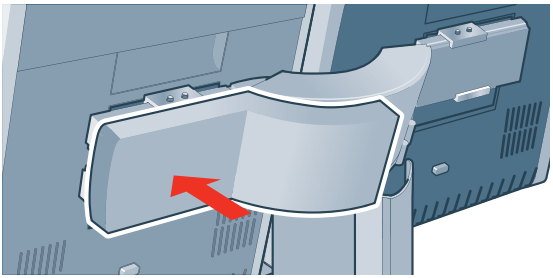
7 使用所提供的電源纜線，將外部直流電源的電源連接器插入到**接地** 電源插座。

8 重新安裝連接器艙蓋。在下后艙蓋的頂部專用空間，使用所有四個底部邊緣將艙蓋定位。將艙蓋頂部輕柔地推向顯示器，同時將兩個釋放邊 （release lip）導向專用空間。

9 按照第 2 到第 8 個步驟的詳細說明，連接第二個顯示器。

10 將纜線蓋板向下滑動到腳軸上，重新安上纜線蓋板。確保顯示器向前傾斜，留出足夠空間，將蓋板直接向下滑。

11 將兩臂蓋板安上。將蓋板定位在臂上，輕柔地將其推到所定位置。



敷設纜線

如果顯示器安裝在系統雙俯仰 & 旋轉支架上，則最好將纜線敷設到兩臂之後和腳軸的纜線槽里，如圖所示。

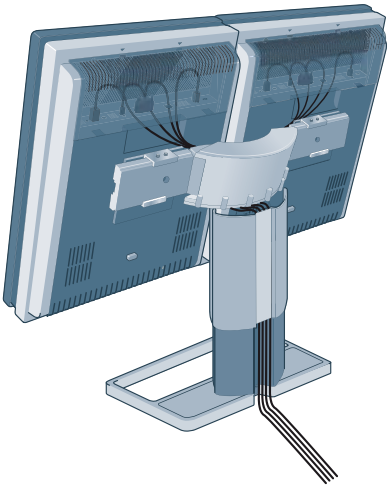


Figure 16: 纜線佈設

定位傾斜顯示器

1. 移除支撐臂蓋。
2. 擰松左右定位滑塊的六角螺絲。
3. 將兩個顯示器滑動到距離彼此最大的位置，小心不要將顯示器從支撐臂上滑落。
4. 旋轉左右顯示器，將支撐臂從中軸拉進或拉出，直至達到所要求的角度。檢查纜線是否正確敷設，不要壓迫到連線。
5. 將兩個顯示器向彼此滑動，直到對齊，而支架數字類似。
6. 固定左右定位滑塊的六角螺絲 （可調整相對螺絲的相對深度，糾正沒有對齊的輕微不足）。
7. 重新安裝臂蓋。

安裝膠片夾

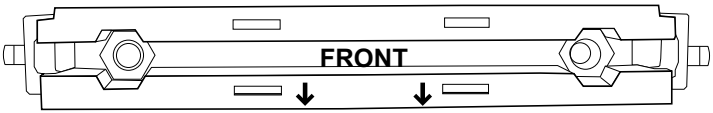
膠片夾可安裝在顯示器的頂部、左側或右側。

1. 可將膠片夾定位在擋板上。
2. 將前面的夾子推向擋板。膠片夾將輕輕就位。
3. 將夾鉗向下 （向側邊）滑過整個螢幕。

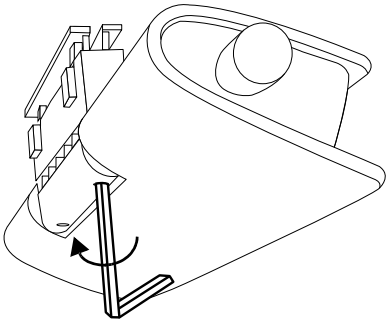
要移除膠片夾，將夾子後端抬出側架。

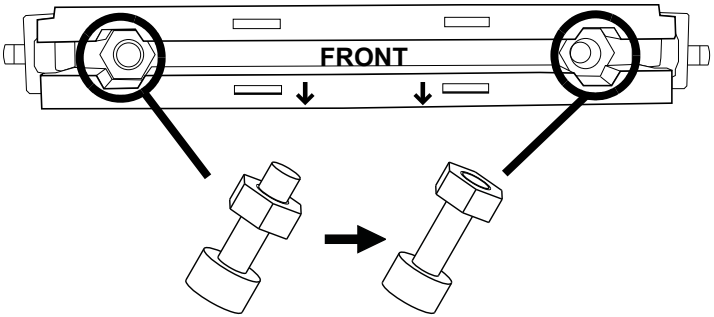
安裝鍵盤燈

1 白色塑料夾上的文字指示鍵盤燈的正面。此面必須安裝在顯示器的正面 （影像一側）。

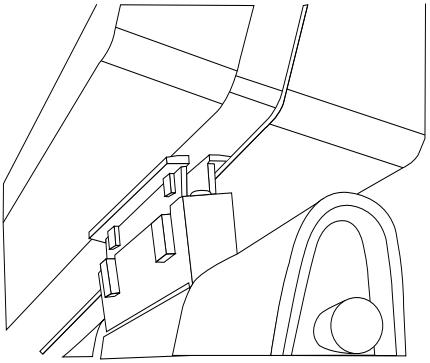


2 使用封閉型艾倫內六角扳手，將桌面燈鉸鏈底部的兩個螺絲擰開。擰開螺絲，直至螺釘的螺紋開始表面與如下圖所示的螺栓同高。

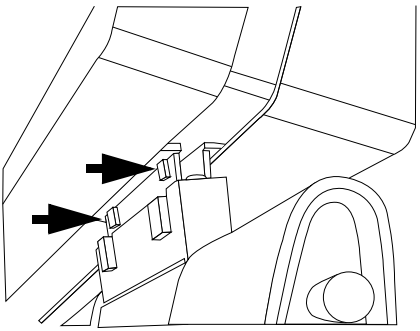




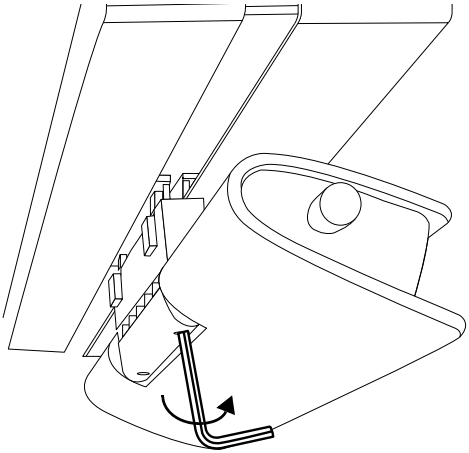
3 將白色塑料夾夠在顯示器擋板空隙的後端。



4 推動白色塑料夾的前端，直至夾子彈進顯示器擋板空隙。

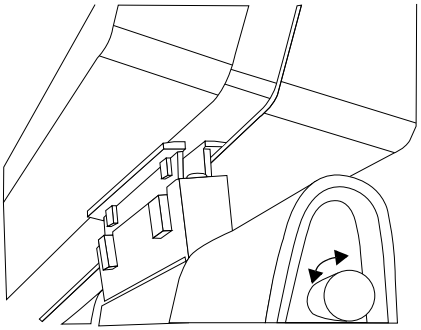


5 使用封閉型艾倫內六角扳手，將鍵盤燈鉸鏈底部的兩個螺絲擰緊。



6 將鍵盤燈mini-jack連接器插入到顯示器的+5伏直流電源輸出連接器上。

7 通過旋轉鍵盤燈側面的旋鈕，調節光的亮度。



首次開啟

現在準備首次開啟您的 BARCO MAMMO TOMOSYNTHESIS 顯示器系統。

1. 開啟您的 MAMMO TOMOSYNTHESIS 顯示器，如 **「休眠狀態切換」**（第 30 頁）中所述。
2. 開啟與顯示器相連的電腦。

如果您已經正確安裝顯示器和顯示控制器，開機過程完成時會出現 Windows 啟動訊息。

首次開啟時，MAMMO TOMOSYNTHESIS 顯示器將以預設更新速率在基本視訊模式中執行。
如果您使用的是 Barco 顯示控制器，請先查閱系統光碟上提供的專用使用指南以安裝驅動程式、軟體和說明文件。完成這些工作後，顯示器將自動偵測連接的視訊輸入訊號並套用適當的視訊模式和更新速率。

日常操作

日常操作建議

優化顯示器的使用壽命

啟用顯示器電源管理系統 (DPMS) 可以在顯示器指定時間未使用後自動關閉背光，以達到優化診斷壽命之作用。在預設條件下，DPMS 已經啟用，但是還需要在工作站上啟用。要這樣做，請移到 「控制台」中的 「電源選項內容」。

Barco 推薦設定在 20 分鐘不使用後啟用 DPMS。

使用螢幕保護程式以避免影像殘留

在液晶顯示器同一螢幕區域過長時間顯示同樣內容可導致影像殘留。

使用螢幕保護程式可避免或有效降低此現象之發生。您可在工作台的 「顯示器內容」視窗中啟用螢幕保護程式。

Barco 推薦設定在 5 分鐘不使用後啟用螢幕保護程式。優秀的螢幕保護程式顯示動態的內容。

如果您連續數小時使用同一個影像進行工作或使用的應用程式含有靜態影像元素 （螢幕保護程式未啟動），請經常變更影像內容以避免靜態元素之影像殘留。

瞭解畫素技術

液晶顯示器使用的是基於畫素的技術。作為液晶顯示器生產過程中的一種正常誤差，少數畫素可能無法亮起或永久保持亮起，但這並不影響產品的診斷功能。為保證產品的最優品質，Barco 採用嚴格的液晶顯示器面板篩選標準。

要瞭解更多關於液晶顯示器技術和缺失畫素的資訊，請造訪 www.barco.com/medical 查閱專門的白皮書。

增強用戶舒適度

每一台 Barco 多頭顯示系統都是顏色匹配的且符合市場最高標準。

Barco 建議將顏色匹配的顯示器放在一起。此外很重要的一點是，應以相同的速率使用多頭設定的所有顯示器，以保持系統整個經濟壽命中顏色的匹配。

最大化品質保證

「MediCal QAWeb」系統提供高級品質保證線上服務，保證診斷信心和最長的正常工作時間。

Barco 推薦安裝 MediCal QAWeb Agent，並且至少要實施預設的 QAWeb 原則。該原則包括定期校準的要求。升級到 MediCal QAWeb 伺服器可以提供更多的可能性。
要瞭解更多資訊和註冊免費的 MediCal QAWeb 基本等級，請造訪 www.barco.com/medical/qa。

按鍵指示燈

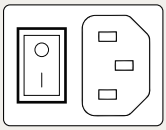
在預設條件下，、和 按鍵指示燈熄滅，此時為不可用狀態。要讓按鍵發光并可用於後續操作，請觸摸未發光按鍵之一。此時，按鍵亮起，可進行後續操作。但是，如果在 5 秒之後未進行下一步操作，按鍵指示燈將再次熄滅。

按鍵總是亮著的，并可用於啟用 I-Luminate 功能。請參閱 「I-Luminate」（第 32 頁）以瞭解更多資訊。

可在 OSD 功能表中停用按鍵指示燈的自動熄滅功能。請參閱 「**按鍵指示燈**」（第 30 頁）瞭解如何執行此作業的詳細說明。

休眠狀態切換

連接的電源還提供一個可用於徹底關閉電源的開關。要使用顯示器，請確保開啟此電源。這可以透過將電源上的開關推到 「|」位置來完成。



將顯示器切換成休眠模式或反過來皆可按如下方式執行：

1. OSD 不在畫面上時，觸碰任何觸控鍵。由此，控制面板照明會開啟幾秒鐘。
2. 控制面板照明開啟時，觸碰休眠 鍵。螢幕上出現一則訊息。
3. 再觸碰一次休眠 鍵以確認。

4 若要在顯示器處於休眠模式時將其開啟，請觸碰任何觸控鍵。下一步，控制面板照明開啟時，觸碰休眠 鍵。

顯示器**開啟**時，電源 LED 燈呈現**藍色**。當顯示器處於**休眠**模式時，電源指示燈為**橙色**。

可在 OSD 功能表中停用電源 LED 燈。請參閱 「**電源狀態指示燈**」（第 36 頁）瞭解如何執行此作業的詳細說明。

在斷電恢復時，顯示器將總是進入它在斷電之前的電源模式（即待命或開啟）。這可以防止顯示器發生意外的影像殘留問題。

I-Luminate

顯示器處於電源打開的模式而 OSD 功能表沒有出現，可觸摸 鍵啟用 I-Luminate。

I-Luminate 支援三種模式：

- 全屏亮度提升。
- 電影 18 x 24 模式。
- 電影 24 x 30 模式。

兩種電影模式的位置可設為：

- 左邊。
- 中間。
- 右邊。

觸摸 I-Luminate 鍵時，根據當前設置，顯示器進入預設 I-Luminate 模式大約 1 分鐘。再次觸碰 I-Luminate 按鍵以立即切換回正常模式。

啟用時，可使用 鍵改變 I-Luminate 模式。

顯示器切換到正常模式時，不需激活時間。增強模式可立刻再次激活。

預設 I-Luminate 模式可在 OSD 功能表中加以設置。請參閱 **「I-Luminate 預設模式」**（第 42 頁）瞭解如何執行此作業的詳細說明。

I-Luminate 電影位置可在 OSD 功能表中加以設置。請參閱 **「I-Luminate 膠片定位」**（第 42 頁）瞭解如何執行此作業的詳細說明。

RapidFrame

RapidFrame 功能是指消除多幀影響序列中的運動模糊和影像重疊功能，并不需要進行任何的用戶互動。開啟之後，RapidFrame 在顯示器變熱時才能達到最佳效應。

調出 OSD 功能表

方法如下：

1. 如果尚未開啟顯示器，按照之前所述這樣做。
2. 如前所述，打開按鍵燈。
3. 按鍵燈亮時，觸摸 鍵。

此時，OSD 主功能表將出現在螢幕的中心。但是，如果在 90 秒之後未進行下一步操作，OSD 將再次消失。

可以在 OSD 功能表中停用 OSD 功能表自動關閉功能。請參閱 **「OSD 功能表自動關閉功能」**（第 36 頁）瞭解如何執行此作業的詳細說明。

可在 OSD 功能表中修改 OSD 功能表的位置。請參閱 **「OSD 功能表位置」**（第 35 頁）瞭解如何執行此作業的詳細說明。

瀏覽 OSD 功能表

瀏覽 OSD 功能表的方法如下：

- 使用 及 鍵在 （子）功能表中移動、變更值或進行選擇。
- 要進入子功能表或確認調整和選擇，使用 鍵。
- 使用 鍵以取消調整或退出 （子）功能表。
- 觸摸 大約 2 秒鐘，立刻退出所有 OSD 功能表。

OSD 功能表啟用時，I-Luminate 不可用。

進階操作

OSD 功能表位置

關於 OSD 功能表位置

在預設條件下，OSD 功能表出現在螢幕的底部中心位置。但是此位置是可以修改的。可從數個預定位置中進行選擇。

要變更 OSD 功能表的位置：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **使用者介面** > **功能表**功能表。
3. 進入**位置**子功能表。
4. 從可用的 OSD 功能表中選擇一個並確認。

OSD 功能表語言

關於 OSD 功能表語言

OSD 功能表預設語言為英文。但是，您的 MAMMO TOMOSYNTHESIS 顯示器還有眾多其他語言可供選擇用於 OSD 功能表。

要變更 OSD 功能表的語言：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **使用者介面** > **功能表**功能表。
3. 進入**語言**子功能表。
4. 選擇一種可用的語言並確認。

OSD 功能表自動關閉功能

關於 OSD 功能表自動關閉功能

在預設條件下，OSD 功能表在約 90 秒無操作後會自動消失。但是，此功能可停用，使得 OSD 功能表保持顯示在螢幕上，直至手動關閉。

要啟用 / 停用 OSD 功能表自動關閉功能：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **使用者介面** > **功能表**功能表。
3. 進入**自動關閉**子功能表。
4. 根據需要選擇**啟用 / 停用**並確認。

電源狀態指示燈

關於電源狀態指示燈

預設條件下，當顯示器開啟時，電源指示燈熄滅。此行為可以變更，使顯示器開啟時電源狀態指示燈變為藍色。

當顯示處於待命模式時，電源狀態指示燈將總是變為橙色；即使停用了電源狀態指示燈亦是如此。

要啟用 / 停用電源狀態指示燈：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **使用者介面** > **指示燈**功能表。
3. 進入**電源狀態**子功能表。
4. 根據需要選擇**啟用 / 停用**並確認。

按鍵指示燈

關於按鍵指示燈

預設條件下，在按鍵指示燈亮起後，如果在接下來的 5 秒鐘內未進行下一步操作，按鍵顯示燈將再次熄滅。但是，此行為可以變更，使得按鍵指示燈保持亮起或保持熄滅。

要設定按鍵指示燈：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **使用者介面** > **指示燈**功能表。
3. 進入**按鍵**子功能表。
4. 根據需要選擇**自動 / 總是亮起 / 總是熄滅**並確認。

I-Luminate 鍵保持發亮且不能關閉。

電源鎖定功能

關於電源鎖定功能

啟用電源鎖定功能將強制 MAMMO TOMOSYNTHESIS 顯示器保持開啟。這意味著除非再次停用電源鎖定功能，否則無法將它轉到待命模式。

要啟用 / 停用電源鎖定功能：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **使用者介面** > **控制**功能表。
3. 進入**電源鎖定**子功能表。
4. 根據需要選擇**啟用 / 停用**並確認。

Ethernet over USB

關於 Ethernet over USB

預設條件下，將停用 Ethernet over USB。這並不會停用 USB 集線器而且仍允許使用顯示器的 USB 下行連接器及與其連接的任何外部裝置 （鍵盤、滑鼠 . . . ）。

請注意，從電腦 USB 下行連接器到顯示器的 USB 上行連接器的連接必須能夠使用此功能。

透過啟用 Ethernet over USB，您允許內部 Mammo Tomosynthesis 顯示器 處理器透過 USB 直接與連接的電腦通訊。

建議僅在使用非 Barco 顯示控制器時啟用 USB 端點。如果使用 Barco 顯示控制器，此通訊將自動透過連接的視訊纜線完成。

要啟用 / 停用 Ethernet over USB：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **連接**功能表。
3. 進入 Eth. over USB 子功能表。
4. 根據需要選擇**啟用 / 停用**並確認。

DDC HID 裝置

關於 DDC HID 裝置

預設條件下，將啟用 DDC HID 裝置。這樣可允許內部 MAMMO TOMOSYNTHESIS 顯示器 處理器透過 USB 直接與連接的電腦通訊。

如果停用 DDC HID 裝置，內部 MAMMO TOMOSYNTHESIS 顯示器 處理器與連接的電腦之間無法通訊。這並不會停用 USB 集線器而且仍允許使用顯示器的 USB 下行連接器及與其連接的任何外部裝置 （鍵盤、滑鼠 . . . ）。

請注意，從電腦 USB 下行連接器到顯示器的 USB 上行連接器的連接必須能夠使用此功能。

建議僅在使用非 Barco 顯示控制器時啟用 USB 端點。如果使用 Barco 顯示控制器，此通訊將自動透過連接的視訊纜線完成。

要啟用 / 停用 DDC HID 裝置：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **連接**功能表。
3. 進入 **DDC HID 裝置**子功能表。
4. 根據需要選擇**啟用 / 停用**並確認。

休眠

關於休眠

啟用休眠不僅會關閉背光，還會強制顯示器停用其他功能，以進一步將功率消耗減至最少。在特定的時間期限後會發生休眠，該時間可手動調整。

僅在啟用 DPMS 模式後，才能在您的顯示器上啟用休眠。因此，請參閱 「**DPMS 模式**」（第 41 頁）實現此操作。

要在顯示器上啟用 / 停用休眠模式：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **電源管理**功能表。
3. 進入**休眠**子功能表。
4. 根據需要選擇**啟用 / 停用**並確認。

要指定休眠逾時：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **電源管理**功能表。
3. 進入**休眠逾時**子功能表。
4. 根據需要設定逾時值並確認。

DPMS 模式

關於 DPMS 模式

啟用顯示器電源管理系統 (DPMS) 模式可以在顯示器指定時間未使用後自動關閉背光，以達到優化診斷壽命之作用。在預設條件下，DPMS 模式已經啟用，但是還需要在工作站上啟用。要這樣做，請移到工作台的「電源選項內容」視窗。

Barco 推薦設定在 20 分鐘不使用後啟用 DPMS。

在顯示器上啟用 DPMS 模式時，以下額外的 OSD 省電功能變得可用：休眠。請參閱 **「顯示器功能」**（第 44 頁）以瞭解關於休眠與如何啟用此功能的更多資訊。

要啟用 / 停用顯示器的 DPMS 模式：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **電源管理**功能表。
3. 進入 **DPMS 模式**子功能表。
4. 根據需要選擇**啟用 / 停用**並確認。

I-Luminate 預設模式

關於 I-LUMINATE 預設模式

I-Luminate 模式在 I-Luminate 增強期間將定義預設激活模式。該模式可以是：

螢幕	增強模式應用於螢幕顯示。
電影 （大或小）	電影 （大或小）：增強模式會激活螢幕上的一個高亮長方形，模擬燈箱，和放射膠片一起使用。該長方形的大小類似于一個典型的 （大或小）放射膠片。

要設置 I-LUMINATE 模式：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **I-Luminate** 功能表。
3. 進入**預設模式**子功能表。
4. 選擇**螢幕** / **小膠片** / **大膠片**并確認。

I-Luminate 膠片定位

關於 I-LUMINATE 膠片定位

預設情況下，I-Luminate 長方形出現在螢幕的頂部 / 中心。并可更改到頂 / 左或頂 / 右角落。

要設置 I-LUMINATE 膠片位置：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **I-Luminate** 功能表。
3. 進入**膠片位置**子功能表。
4. 根據需要選擇**左** / **中** / **右**並確認。

亮度目標

關於亮度目標

MAMMO TOMOSYNTHESIS 顯示器的亮度目標可在預定之範圍內調整。當您變更亮度目標時，顯示器將調節其背光以達到目標。

要設定亮度目標：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **校準**功能表。
3. 進入**亮度目標**子功能表。
4. 根據需要設定亮度目標值並確認。

預設值為 1.000 cd/m²。本設置有五年保固期。

檢視模式

關於檢視模式

MAMMO TOMOSYNTHESIS 顯示器可用兩種檢視模式：

診斷	此模式提供完全校準的亮度，旨在將顯示器用於診斷目的。
文字	在這種模式下，亮度大約減半。這種模式旨在將顯示器用於辦公用途，例如文字處理。 請注意，文字模式不能持續，一旦斷開電源，設備將重啟進入診斷模式。

由於 MAMMO TOMOSYNTHESIS 顯示器要用於診斷環境中，所以總是選擇診斷模式。

要選擇檢視模式：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **校準**功能表。
3. 進入**檢視模式**子功能表。
4. 根據需要選擇**診斷 / 文字**並確認。

顯示器功能

關於顯示器功能

未經修改的原生面板將以相同的亮度增量顯示所有灰階 / 彩色等級。但是，研究發現，在醫學影像中有些灰階 / 彩色部分比其他部分包含更多的診斷資訊。針對這些結論定義了顯示功能。這些功能可以透過更正原生面板行為突出包含關鍵診斷資訊的影像部分。

原生	若您選擇 「原生」，原生面板行為將不會被更正。
動態 Gamma 1.8 **動態 Gamma 2.2**	這些 Gamma 函數在受到 「黑色」訊號驅動時會將 LCD 面板的非零亮度納入考量。 它們在 CT 應用中對提高低 Hounsfield 值的感知尤其有用。
DICOM	DICOM （醫療數位造影及傳輸）是一項旨在提高放射學數位影像的品質和傳輸效率的國際標準。 簡而言之，DICOM 顯示函數導致影像中出現更多可見的灰階。 Barco 建議選取 DICOM 顯示函數用於大多數醫學檢視用途。
使用者	當顯示函數由 MediCal QAWeb 定義時，將自動選擇此顯示函數。

Gamma 1.8 Gamma 2.2	當顯示器要將 CRT 顯示分別替換為 1.8 或 2.2 的 Gamma 值時，選擇這些顯示函數之一。

要選擇顯示功能：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **校準**功能表。
3. 進入**顯示功能**子功能表。
4. 選擇一種可用的顯示功能並確認。

環境光線補償（ALC）

關於 ALC

僅在選擇 DICOM 顯示功能時才能在顯示器上啟用環境光線補償（ALC）。因此，請參閱「**顯示器功能**」（第 44 頁）正確設定顯示功能。

啟用 ALC 功能時，DICOM 顯示功能會將預設的環境光線校正值納入考量並重新計算。此值是由選定的閱片室決定的。因此，在啟用 ALC 功能時選擇實際的閱片室同樣很重要。此操作可遵循「**閱片室**」（第 46 頁）中的說明完成。

要啟用 / 停用 ALC 功能：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **校準** > **環境光線**功能表。
3. 進入**環境光線補償**子功能表。
4. 根據需要選擇**啟用 / 停用**並確認。

閱片室

關於閱片室

僅在選擇 DICOM 顯示函數後方可選擇閱片室。因此，請參閱 **「顯示器功能」**（第 44 頁）正確設定顯示功能。

美國醫學物理師協會 (AAPM) 擬設了一系列預先定義的閱片室。每一個閱片室都由以下參數定義：

- 此類房間內允許的最大光線強度
- 此閱片室預設的環境校正值

這些參數儲存在顯示器中並決定預設的光線校正值；此光線修正值在啟用環境光線補償 (ALC) 時將作為重新計算 DICOM 顯示功能的考量因素。請參閱 **「環境光線補償 (ALC)」**（第 45 頁）以啟用 ALC 功能。

MAMMO TOMOSYNTHESIS 顯示器可用的閱片室有：

CR/DR/MAMMO	對應於電腦放射攝影、數位攝影或乳房 X 光攝影的診斷閱片室的光線條件。此設定具有最低的最大環境光線強度值。
CT/MR/NM	對應於電腦放射攝影、磁共振造影或核子醫學掃描的診斷閱片室的光線條件。
寫字樓	對應於辦公室的光線條件。
臨床觀察室	對應於臨床觀察診斷閱片室的光線條件。
急診室	對應於急診室的光線條件。
手術室	對應於手術室的光線條件。此設定具有最高的最大環境光線強度值。

要選擇閱片室：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **校準** > **環境光線**功能表。

3 進入**閱片室**子功能表。

4 選擇一個可用的閱片室並確認。

持續 ALC

關於持續 ALC

僅在選擇 DICOM 顯示函數後方可選擇持續 ALC。因此，請參閱 **「顯示器功能」**（第 44 頁）正確設定顯示功能。

啟用持續 ALC 將考量平均環境光線持續重新計算 DICOM 顯示函數。

要選擇持續 ALC：

1 調出 OSD 主功能表。

2 瀏覽至**設定** > **校準** > **環境光線**功能表。

3 進入**持續 ALC** 子功能表。

4 根據需要選擇**啟用 / 停用**並確認。

影像縮放

關於影像縮放

啟用影像縮放可將每一單個畫素與相鄰之一個或多個畫素相迭加，使得顯示之影像尺寸是原影像來源視訊輸入訊號的倍數。

只有在顯示器視訊輸入訊號解析度小於或等於顯示器最大解析度的一半時，影像縮放才可能實現。

要啟用 / 停用影像縮放：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **影像來源**功能表。
3. 進入**縮放**子功能表。
4. 根據需要選擇**啟用 / 停用**並確認。

視訊輸入訊號

關於視訊輸入訊號

顯示器可用的輸入訊號有：

顯示器埠 1	對應於顯示器埠連接器的輸入
DVI 1	對應於 DVI 連接器的輸入
自動選擇	已自動選擇輸入。

要手動選擇視訊輸入訊號：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **影像來源**功能表。
3. 進入**輸入訊號**子功能表。
4. 選擇一種可用的輸入訊號並確認。

視訊編碼模式

關於視訊編碼模式

視訊編碼模式說明如何將顏色及亮度資訊編入視訊訊號中。在消費者顯示器中，這通常是透過有限 8 位元編碼機制實現的。但是，您的 MAMMO TOMOSYNTHESIS 顯示器採用的是 10 位元編碼，這使它能更好地匹配 DICOM 定義的灰階範圍。這種廣泛的範圍對於滿足最新醫學指引的規定是必需的。

顯示器可用的視訊編碼模式如下所列。

請注意，連接至顯示器的顯示控制器不一定支援所有這些視訊編碼模式。

標準	此模式使用標準的 8 位元編碼機制。
HDR1	此模式使用符合高動態範圍 (HDR) 標準的 10 位元視訊編碼，該標準通常用於彩色顯示器。
HDR2	HDR2 是 Barco 特有的模式，具備符合高動態範圍 (HDR) 標準的 10 位元視訊編碼，但是允許完整更新速率 (HDR1 則並非總能允許)。此模式通常用於彩色顯示器。
Dual 10	Dual 10 是一種 Barco 特有的 10 位元視訊編碼模式，通常用於灰階顯示器，允許完整更新速率。
自動	選擇此選項時，MAMMO TOMOSYNTHESIS 顯示器將自動為連接的視訊輸入訊號指定正確的視訊編碼設定。

要手動選擇視訊輸入編碼模式：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **影像來源**功能表。
3. 進入**視訊編碼**子功能表。
4. 選擇一種可用的視訊編碼模式並確認。

灰階轉換模式

關於灰階轉換模式

灰階轉換模式說明如何在您的顯示器上將顯示控制器生成的顏色轉換為灰階。

可用的灰階轉換模式有：

使用紅色通道	此模式用於通過紅色通道傳送灰色的灰階顯示器。
使用綠色通道	此模式用於通過綠色通道傳送灰色的灰階顯示器。
使用藍色通道	此模式用於通過藍色通道傳送灰色的灰階顯示器。
使用所有通道	此模式用於通過紅、綠和藍色通道傳送灰色的灰階顯示器。這是透過使用 30% 紅色、59% 綠色和 11% 藍色生成灰色的標準轉換機制實現的。

要手動選擇灰階轉換模式：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **影像來源**功能表。
3. 進入**灰階轉換**子功能表。
4. 選擇一種可用的色彩轉換模式並確認。

EDID 計時

關於 EDID 計時

MAMMO TOMOSYNTHESIS 顯示器可使用以下 EDID 計時：

更新速率	允許根據連接至顯示器的顯示控制器的最大更新速率，手動選擇影像來源視訊輸入訊號之更新速率。
色深	允許將色深改為 8 或 10 位。

要手動設定 EDID 計時：

1. 調出 OSD 主功能表。
2. 瀏覽至**設定** > **影像來源**功能表。
3. 進入**計時**子功能表。
4. 選擇**更新速率**或**色深**。
5. 選擇一種可用的設定並確認。

顯示器資訊

關於顯示器資訊

OSD 功能表的一個專門子功能表中顯示了顯示器的序號、顏色類型、原生解析度、韌體版本等資訊。

要查看關於顯示器的資訊：

1. 調出 OSD 主功能表。
2. 瀏覽至**關於本顯示器**功能表。
3. 根據需要進入**顯示器**子功能表。

顯示器狀態

關於顯示器狀態

OSD 功能表的「狀態」子功能表提供有關顯示器目前狀態（工作時間、溫度等）、所連接影像來源狀態（視訊編碼模式、計時等）和顯示器目前校準狀態（顯示功能、亮度、ALC 等）以及有關已啟動連接狀態的資訊。

要查看顯示器的狀態：

1. 調出 OSD 主功能表。
2. 瀏覽至**狀態**功能表。
3. 根據需要進入**顯示器**、**影像來源**、**校準**或**連接**子功能表。

維護

本 MAMMO TOMOSYNTHESIS 顯示器不要求任何預定維護活動。如出現缺陷，請將顯示器返回到 Barco 公司所同意的維護中心。如有任何疑問，請聯繫 Barco 醫療影像部門。

⚠ 從雙俯仰 & 旋轉支架上移除兩個顯示器，并運輸之前，將俯仰 & 旋轉鎖定。

⚠ 在將顯示器從支架上移除之前，要確保俯仰位置完全向上。這將防止顯示器的重量消除之後俯仰彈簧裝置可能會造成的損害。

清潔說明

保護玻璃

使用醮有**少許**以下一種經測試產品的海綿、擦拭布或柔軟紙巾擦拭保護玻璃：

- Flux
- Pril 清潔劑
- Windex Glass Plus 玻璃清潔劑
- Ajax 玻璃清潔劑
- Bohle 玻璃清潔劑
- Sidolin 玻璃清潔劑
- Mr. Proper 清潔劑
- 25% 乙醇溶液 （EtOH）

如果沒有以上清潔產品，就用普通清水。

⚠ 注意不要損壞或刮傷保護玻璃。注意戒指或其他首飾，不要重壓保護玻璃。

⚠ 不要在保護玻璃上直接施用或噴灑液體，因為過量液體可導致內部電氣元件損壞。應將液體施加在擦拭布上。

⚠ 不要使用以下產品：

- 濃度高於 5% 的酒精 / 溶劑。
- 強鹼溶液，強溶劑
- 酸
- 含氟洗滌劑
- 含氨洗滌劑
- 含磨料的洗滌劑
- 鋼絲絨
- 含磨料的海綿
- 鋼刀片
- 含鋼絲的布

機殼

1 使用醮有**少許**經認可的醫療設備清潔產品的軟棉布清洗機殼。

經檢驗，機殼對以下產品有抵抗作用：

- Cidex, Betadine
- 醇 （異丙醇和乙醇）
- 含氨的洗滌劑 (Windex)
- Aquasonic 凝膠

如果沒有以上清潔產品，就用普通清水。

⚠ 不要在機殼上直接使用或噴灑液體，因為過量液體可導致內部電子元件之損壞。應將液體施加在擦拭布上。

2 再次清洗只能用清水。

3 用乾布擦乾。

重要資訊

安全說明

一般建議

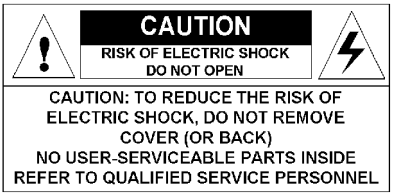
在操作顯示器之前，請閱讀安全及操作說明。

保留安全及操作說明以備日後參考。

嚴格遵守顯示器上及操作說明手冊裏的所有警告。

在操作和使用過程中遵守所有說明。

觸電



保護類型 （觸電）：

帶有外部電源的顯示器：I 類設備

安全度 （易燃麻醉混合物）：

設備不宜在可燃性麻醉藥與空氣、氧氣或一氧化二氮混合的環境中使用。

非患者護理性設備

設備主要用於醫療保健設施，不會被患者接觸。

電源連接 – 配備外部 24 V 直流電源的顯示器

- 電源要求: 顯示器必須透過所附經批准的醫用 24V 直流 SELV 電源供電。
- 經批准的醫用直流電源必須由交流市電電源供電 （保護性接地端子）。

瞬態過電壓

如果設備長期不用，請將其從交流電電源斷開，避免瞬態過電壓。

要將該部件的電源完全切開，請將電源線從交流電入口斷開。

電源線:

- 使用 UL 列出的可拆卸式三線 SJ 型或等效類型，最小 18 AWG，最小額定電壓 300V 的電源線並配備醫院級 120V 插頭 5-15P 或 240V 插頭 6-15P。
- 不要使牆上插座和延長線過載，這會引起火災或觸電。
- 市電引線保護 （美國：電源線）：電源線佈線應使得其不會被踩踏或被上面或靠著的物件擠壓，特別注意插頭和插座處的線。

水和濕氣

切勿使顯示器接觸雨水或濕氣。

切勿在近水處使用顯示器 – 如靠近浴池、臉盆、游泳池、廚房水槽、洗衣盆或在濕潤的地下室中。

通風

不要覆蓋或阻擋設備蓋上的通風孔。在櫥櫃內或其他封閉的位置安裝顯示器時，注意設備和櫥櫃壁之間保留必要的間隙。

安裝

將顯示器安置在至少可支承三台顯示器重量的平穩表面上。如果使用不穩定的推車或支架，顯示器可能掉落，給兒童或成人造成嚴重傷害並對設備造成嚴重損壞。

本設備符合：

CE0120 （MDD 93/42/EEC； A1:2007/47/EC IIb 類產品）、CE - 2004/108/EC、CE - 93/42/EEC； A1:2007/47/EC II b 類、IEC 60950-1:2005 + A1:2009 （第 2 版）、IEC 60601-1 （第 2 版）:1988 + A1:1991 + A2:1995、UL 60601-1 （第 1 版）、CAN/CSA-C22.2 NO.601.1-M90:2005、IEC 60601-1:2005 + A1:2012、ANSI/AAMI ES 60601-1:2005 + C1:2009 + A1:2012、CAN/CSAC22.2 No. 60601-1-08:2008、DEMKO - EN 60601-1:2006、EN 60601-1-2:2007、CCC - GB9254-2008 + GB4943-2001 + GB17625.1-2003、KC、VCCI、FCC B 類、ICES-001 B 類、FDA 510K、RoHS。

北歐國家關於條款 1.7.2 的偏差：

芬蘭：″Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan″
挪威：″Apparatet må tilkoples jordet stikkontakt″
瑞典：″Apparaten skall anslutas till jordat uttag″

環境資訊

處置資訊 （廢棄的電氣電子設備）

產品上的此標識表示，根據歐盟關於電氣電子設備廢棄物的 2002/96/EC 指令，本產品不可與其他城市垃圾一起處置。請將要處置的廢棄設備送到指定的收集點，以供廢棄電氣電子設備的回收。為防止未經控制的廢物處置對環境和人類健康造成可能的危害，請將這些零件與其他垃圾分開，積極回收利用以促進物質資源之可持續再利用。

如果需要有關本產品回收的更多資訊，請聯絡當地政府部門、市廢棄物處置管理部門或您購買本產品的商店。

汞提示

本 Barco 產品包含可能含汞的器件，必須依照當地、州或國家法規回收或處置。

- 在本系統內，顯示器中的背光燈包含汞

土耳其 RoHS 標準

土耳其共和國：遵守電子電氣工程規定
Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur

中國大陸 RoHS (Chinese Mainland RoHS)

根據中國大陸《電子信息產品污染控制管理辦法》（也稱爲中國大陸 RoHS），以下部分列出了 Barco 產品中可能包含的有毒和 / 或有害物質的名稱和含量。中國大陸 RoHS 指令包含在中國信息產業部 MCV 標準：「電子信息產品中有毒物質的限量要求」中。

根據中國大陸《電子信息產品污染控制管理辦法》（也稱為中國大陸 RoHS），以下部分列出了 Barco 產品中可能包含的有毒和 / 或

有害物質的名稱和含量。中國大陸 RoHS 指令包含在中國信息產業部 MCV 標準：「電子信息產品中有毒物質的限量要求」中。

部件項目（名稱） Component Name	有毒有害物質或元素 Hazardous Substances or Elements					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr6+)	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
印制電路配件 Printed Circuit Assemblies	X	0	0	0	0	0
液晶面板 LCD panel	X	X	0	0	0	0
外部纜線 External cables	X	0	0	0	0	0
內部線路 Internal wiring	0	0	0	0	0	0
金屬外殼 Metal enclosure	0	0	0	0	0	0
塑膠外殼 Plastic enclosure	0	0	0	0	0	0
散熱片（器） Heatsinks	0	0	0	0	0	0
風扇 Fan	0	0	0	0	0	0
電源供應器 Power supply unit	X	0	0	0	0	0
紙本說明書 Paper manuals	0	0	0	0	0	0
光碟說明書 CD manual	0	0	0	0	0	0

O：表示該有毒有害物質在該部件所有均質材料中的含量均在 SJ/T 11363-2006 標準規定的限量要求以下。
O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

X：表示該有毒有害物質至少在該部件的某一均質材料中的含量超出 SJ/T 11363-2006 標準規定的限量要求。
X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363 2006.

在中國大陸銷售的相應電子信息產品 (EIP) 都必須遵照中國大陸《電子信息產品污染控制標識要求》標準貼上環保使用期限 (EFUP) 標籤。Barco 產品所採用的 EFUP 標籤（請參閱實例，徽標內部的編號使用於制定產品）基於中國大陸的電子信息產品環保使用期限通則標準。

在中國大陸銷售的相應電子信息產品 (EIP) 都必須遵照中國大陸《電子信息產品污染控制標識要求》標準貼上環保使用期限 (EFUP) 標籤。Barco 產品所採用的 EFUP 標籤內的數字 （請參見照片）基於中國大陸的 《電子信息產品環保使用期限通則》標準。

監管合規資訊

使用說明

本 Mammo Tomosynthesis 顯示器 (MDMG-5221) 用於顯示和檢視數位影像，包括標準和多幀數位乳房 X 光檢查影像，以供受過訓練的醫師檢閱及分析和診斷。這是專為乳房層析應用而設計的。

警告：聯邦法律限制醫生或根據醫生訂單而銷售此裝置。（要瞭解詳情 & 豁免，請查閱美國聯邦法規標題 21,801 部份 D）

FCC B 類

本裝置符合 FCC 法規第 15 節的規定。操作須遵守以下兩條規定：(1) 本裝置不會引起有害干擾，且 (2) 本裝置必須接受收到的任何干擾，包括可能會引起異常工作情況的干擾。

經測試，發現本設備符合 FCC 法規第 15 節關於 B 類數位裝置的限制條件。這些限制旨在對民用環境中的有害干擾提供合理保護。本設備會生成、使用並可以輻射射頻能量，如果不按照說明進行安裝和使用，可能對無線通訊造成有害干擾。但是，不保證在特定安裝條件下不會出現該干擾。如果本設備對無線電或電視接收產生有害干擾 （這可以透過開 / 關設備來確定），鼓勵用戶採用以下一種或多種措施清除干擾：

- 重新定向或重新定位接收天線。
- 增大設備和接收器之間的距離。
- 將設備和接收器連接到不同電路的插座上。
- 諮詢經銷商或者有經驗的無線電 / 電視技術人員，尋求相關幫助。

加拿大通告

此 B 類數位裝置符合加拿大 ICES-003 的要求。
Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.

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EMC 通告

使用外部纜線或其他配件 （電源除外）時並無特定要求。

安裝本裝置時，僅可使用附帶的電源或法定製造商提供的備用零件。使用其他電源或零件可能會導致裝置的抗擾性電平降低。

電磁輻射

Mammo Tomosynthesis 顯示器 旨在用於下文所述電磁環境中。

Mammo Tomosynthesis 顯示器 客戶或使用者應保證在上述環境中使用此裝置。

輻射測試	合規性	電磁環境 – 指引
RF 輻射 CISPR 11	1 組	Mammo Tomosynthesis 顯示器 僅將 RF 能量用於其內部功能。因此，其 RF 輻射非常低，不可能對周邊電子設備造成任何干擾
RF 輻射 CISPR 11	B 類	Mammo Tomosynthesis 顯示器 適用於所有設備，包括家用設備及直接與向內部使用的建築供應的公共低壓電源網路連接的設備。
諧頻輻射 IEC 61000-3-2	D 類	
電壓波動 / 閃爍輻射 IEC 61000-3-3	符合	

在對周邊設備造成干擾和接受來自周邊設備的干擾方面，本 Mammo Tomosynthesis 顯示器 符合適當的醫療 EMC 標準。操作須遵守以下兩條規定：(1) 本裝置不會引起有害干擾，且 (2) 本裝置必須接受收到的任何干擾，包括可能會引起異常工作情況的干擾。

可透過開關設備來確定干擾。

如果本設備對週邊設備造成有害干擾，或受到週邊設備的有害干擾，鼓勵使用者採用以下一種或多種措施消除干擾：

- 重新定向或重新定位接收天線或設備。
- 增大設備和接收器之間的距離。
- 將設備和接收器連接到不同電路的插座上。
- 諮詢經銷商或者有經驗的技術人員，尋求相關幫助

電磁抗擾性

Mammo Tomosynthesis 顯示器 旨在用於下文所述電磁環境中。Mammo Tomosynthesis 顯示器 客戶或使用者應保證在上述環境中使用此裝置。

抗擾性測試	IEC 60601 測試級別	合規級別	電磁環境 – 指引
靜電放電 (ESD) IEC 61000-4-2	± 6kV 接觸放電 ± 8kV 空氣放電	± 6kV 接觸放電 ± 8kV 空氣放電	地面應為木質、混凝土或陶瓷地磚。如地面覆蓋合成材料，則相對濕度至少應在 30%
電快速瞬變 / 脈衝群 IEC 61000-4-4	電源線：± 2kV 輸入 / 輸出線：± 1kV	電源線：± 2kV 輸入 / 輸出線：± 1kV	電源的電能質量應能滿足特定的商業或醫院環境
電涌 IEC61000-4-5	線間：± 1 kV 對地線路：± 2 kV	線間：± 1 kV 對地線路 ± 2 kV	電源的電能質量應能滿足特定的商業或醫院環境
電源輸入線電壓驟降、短期間電壓中斷和電壓變化 IEC 61000-4-11	< 5% U_T（驟降 > 95% U_T），持續 0.5 週波 40% U_T（驟降 60% U_T），持續 5 週波 70% U_T（驟降 30% U_T），持續 25 週波 < 5% U_T（驟降 >95% U_T），持續 5 秒	< 5% U_T（驟降 > 95% U_T），持續 0.5 週波 40% U_T（驟降 60% U_T），持續 5 週波 70% U_T（驟降 30% U_T），持續 25 週波 < 5% U_T（驟降 >95% U_T），持續 5 秒	電源的電能質量應能滿足特定的商業或醫院環境。若 Mammo Tomosynthesis 顯示器的使用者要求在電源中斷期間繼續操作，則建議 Mammo Tomosynthesis 顯示器 使用不中斷電源或電池供電。

U_T 為進行測試級別之前的交流電電源的電壓

抗擾性測試	IEC 60601 測試級別	級別	電磁環境 – 指引
電源頻率（50/60 Hz）磁場 IEC 61000-4-8	3 A/m	不可用	電源頻率磁場應在一定水平，以滿足特定商業或醫院環境內特定地點的要求。
傳導性 RF IEC 61000-4-6 輻射性 RF IEC 61000-4-3	3 Vrms 150 kHz 至 80 MHz 3 V/m 80 MHz 至 2.5 GHz	3 V 3 V/m	使用便攜式和移動 RF 通訊設備時，其與 Mammo Tomosynthesis 顯示器 任何部件（包括纜線）的距離不得小於建議間隔距離，該距離根據適用於發射器頻率的方程式計算得出。 建議間隔距離 $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ 80 MHz 至 800 MHz $d = 2.3\sqrt{P}$ 800 MHz 至 2.5 GHz 其中 P 是發射器製造商指明的發射器最大輸出功率，單位為瓦特 (W)，d 是建議間隔距離，單位為米 (m)。 固定 RF 發射器磁場強度（根據電磁現場測量確定），a 應低於各頻率範圍的合規水平。b 在標有以下標誌的設備周邊可能會有干擾：

a 對於固定發射器的磁場強度，如無線電（蜂巢式／無線）電話和地面移動無線電、業餘用無線電、AM 和 FM 無線電廣播及電視廣播基站，理論上無法進行準確預測。若要評估固定 RF 發射器的電磁環境，則應考量電磁現場測量。若在 Mammo Tomosynthesis 顯示器 使用地點測量的磁場強度超過適用的上述 RF 合規級別，則應觀察 Mammo Tomosynthesis 顯示器，以確認是否屬正常操作。若觀察到異常操作，則可能需要採取額外措施，如重新定向或重新定位 Mammo Tomosynthesis 顯示器。

b 高於 150 kHz 至 80 MHz 的頻率範圍時，磁場強度應低於 3 V/m。

在 80 MHz 及 800 MHz 時，適用更高的頻率範圍。

這些指引未必適用於所有情況。電磁傳播受建築物、物體和個人的吸收和反射影響。

建議間隔距離

MAMMO TOMOSYNTHESIS 顯示器 旨在用於輻射性 RF 干擾受控的電磁環境中。MAMMO TOMOSYNTHESIS 顯示器 客戶或使用者可根據通訊設備的最大輸出功率，將便攜式和移動 RF 通訊設備 （發射器）與 MAMMO TOMOSYNTHESIS 顯示器 保持以下建議的最小距離，

從而協助防止電磁干擾。

發射器的額定最大輸出功率 W	根據發射器的頻率確定的間隔距離		
	150kHz 至 80MHz $d = 1.2\sqrt{P}$	80MHz 至 800MHz $d = 1.2\sqrt{P}$	800MHz 至 2.5GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

對於上文沒有載列的已達到最大輸出功率的發射器，建議間隔距離 （按米 (m) 計算）可使用適用於該發射器頻率的方程式估算。其中 P 為發射器製造商制定的發射器最大輸出功率，單位為瓦特 (W)。

在 80MHz 及 800MHz 時，適用更高頻率範圍的間隔距離。

這些指引未必適用於所有情況。電磁傳播受建築物、物體和個人的吸收和反射影響。

符號說明

在顯示器或電源上，可以發現以下符號 （非限制性清單）：

CE 0120	表示符合 93/42/EEC 指令的必要要求。
FC	表示符合 FCC 規則第 15 節的規定（A 類或 B 類）
UL 或 CLASSIFIED UL	表示顯示器依照 UL 條例獲批准
c UL us 或 CLASSIFIED c UL us	表示顯示器依照 c-UL 條例獲批准
D	表示顯示器依照 DEMKO 條例獲批准
CCC	表示顯示器依照 CCC 條例獲批准
VCCI	表示顯示器依照 VCCI 條例獲批准
	表示顯示器上的 USB 連接器
	表示製造日期
15 35	表示顯示器在技術規範範圍內工作的溫度限制。
SN	表示顯示器序號。
	參閱操作說明

表示不得將本設備扔到垃圾中，必須依照歐洲 WEEE （電氣電子設備廢物）指令回收。

技術規格

產品縮寫詞	MDMG-5221
螢幕技術	TFT AM LCD 雙域 IPS
有效螢幕尺寸（對角線）	540.9 mm (21.3”)
有效螢幕尺寸（寬 x 高）	377.9 x 422.4 mm (14.9 x 16.6“)
寬高比（寬：高）	4:5
解析度	5MP (2048 x 2560)
畫素間距	0.165 mm
彩色成像	否
灰色成像	是
灰階數量（LUT 輸入 /LUT 輸出）	1024 灰度等級 (10/12)
可視角度（寬，高）	170°
亮度均衡技術 (ULT)	是
單位畫素均衡 (PPU)	是
環境光線補償 (ALC)	是
背光輸出穩定 (BLOS)	是
I-Guard	是
最大亮度	2.100 cd/m² 典型
DICOM 校準亮度 （ULT 關閉）	1000 cd/m²
對比度（典型值）*	950:1
回應時間 (Tr + Tf)	15 ms 典型值
掃描頻率（寬；高）	30-150 kHz；15-80 Hz
殼體顏色	灰色
視訊輸入訊號	DVI-D 雙鏈接 / 顯示器埠 (每顯示器)

視訊出入端子	不可用
USB 埠	1 上行（端點），3 下行
USB 標準	2.0
電源要求（額定）	100-240V
功率消耗（額定）	125W
節電模式	是
電源管理	DVI-DMPM / DP-DMPM
點時鐘	280 MHz
OSD 語言	英文、德文、法文、荷蘭文、西班牙文、義大利文、葡萄牙文、波蘭文、俄文、瑞典文、簡體中文、日文、韓文、阿拉伯文
帶支架尺寸（寬 x 高 x 深）	不可用
無支架尺寸（寬 x 高 x 深）	竪向 : 392 x 484 x 122 mm 橫向：不可用
包裝尺寸（寬 x 高 x 深）	780 x 550 x 261mm
帶支架淨重	不可用
無支架淨重	10.9 kg
帶支架包裝淨重	不可用
無支架包裝淨重	17.3 kg
高度調節範圍	100 mm
俯仰角度	-5˚ / +30˚
旋轉角度	-45˚ / +45˚
旋轉	90˚
安裝標準	VESA (100 mm)
螢幕保護	無反射玻璃保護蓋
推薦模態	乳房 X 光攝影，乳房層析，CT, MR, US, DR, CR, NM, Film

認證	CE0120（MDD 93/42/EEC；A1:2007/47/EC IIb 類產品）、CE - 2004/108/EC、CE - 93/42/EEC；A1:2007/47/EC II b 類、IEC 60950-1:2005 + A1:2009（第 2 版）、IEC 60601-1（第 2 版）:1988 + A1:1991 + A2:1995、UL 60601-1（第 1 版）、CAN/CSA-C22.2 NO.601.1-M90:2005、IEC 60601-1:2005 + A1:2012、ANSI/AAMI ES 60601-1:2005 + C1:2009 + A1:2012、CAN/CSAC22.2 No. 60601-1-08:2008、DEMKO - EN 60601-1:2006、EN 60601-1-2:2007、CCC - GB9254-2008 + GB4943-2001 + GB17625.1-2003、KC、VCCI、FCC B 類、ICES-001 B 類、FDA 510K、RoHS。
提供的配件	用戶指南 快速安裝單 視訊纜線 (2 x 顯示器埠) 兩套主纜（英國、歐洲 (CEBEC/KEMA)，美國 (UL/CSA; 插頭 NEMA 5-15P), 中國 (CCC)） 兩個 USB 2.0 纜線 兩個外部電源 膠片夾 鍵盤燈
可選配件	額外膠片夾 (V622784) 額外鍵盤燈 (B4100574)
品質保證軟體	MediCal QAWeb
每貨盤數量	不可用
貨盤尺寸	不可用
保固期	5 年
工作溫度	0˚C 到 35˚C（技術規範範圍內 20˚C 到 30˚C）
儲存溫度	-20˚C 至 60˚C
濕度	90% （0˚C 到 40˚C）
海拔高度	倉儲高度 : 7.500 米 工作高度：3.000 米

* 暗黑閱片室環境（0 lux）

法律免責聲明

著作權通告

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